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May 11, 2001

Donna Wieting, Chief
Marine Mammal Conservation Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910-3226

Re: Proposed rule granting the U.S. Navy's request for a small take exemption under section 101(a)(5)(A) of the MMPA in the deployment of SURTASS LFA sonar

Dear Ms. Wieting,

I am a retired defense systems analyst with degrees in physics and numerical analysis. I strongly urge the NMFS not to grant the U.S. Navy a permit to take marine mammals by deploying the SURTASS LFA sonar system.

I have read the published reports of changes in whale behavior and of whale strandings and deaths coincident with tests of underwater sound sources of various intensities and frequencies.

- In a 1998 Nature article, Alexandros Frantzis pointed out that 12 Cuvier's beaked whales beached themselves alive on a Mediterranean coast while NATO was testing LFAS there. He concluded the chance of that happening for any other reason was less than 0.07 percent.
- In March 2000, Kenneth Balcomb, director of the Center for Whale Research in Friday Harbor, Washington, found a total of 16 whales stranded over a 200-mile area around Abaco Island, Bahamas. This occurred immediately after a day of Navy mid-frequency sonar exercises in the area. Balcomb collected the whale heads and sent them to the Harvard Medical School for CT scans. The research concluded that the loud sounds caused a "resonance phenomenon" in the air cavities of the whales' heads. The sound vibrations were literally "tearing apart delicate tissues around the brain and ears," he said, leading to hemorrhage and death.

In these two instances, the frequencies tested differed from those that the Navy proposes to use for its LFAS system, hence the Navy attempts to label these events as irrelevant.

On the contrary, these two events are highly relevant because they prove that marine mammals within large areas surrounding a high intensity sonar source can certainly be injured or killed. As a physicist, I believe it is reasonable to assume that different sonar frequencies will cause this "resonance phenomenon" in different size body cavities. The lower frequency sound generated by the Navy's proposed system will cause a resonance in larger body cavities than the mid-frequency sonar used in the Bahamian test. For example, rather than affecting whales' brains and eyes, the lower frequencies might affect their lungs instead, with equally lethal results.

The Navy is not able to predict how large the lethal area might be because low frequency sound waves propagate long distances with little loss in intensity. Indeed, The Navy chose to use low frequency sonar precisely because of this attribute.

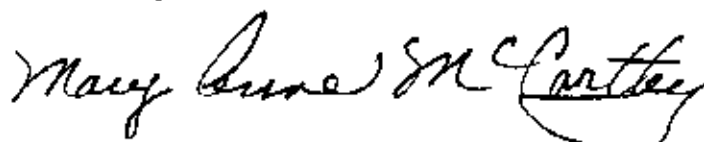
I attended the public hearing held by NMFS on April 26, 2001 in Los Angeles where I heard Mr. Joe Johnson's briefing on the Navy's Environmental Impact Statement. I will quote one statement made by Mr. Johnson. He said: "*Whales can avoid the sound by diving.*" A chart he presented showed that, indeed, the highest intensity sound is generally confined to a channel near the surface of the ocean.

Unfortunately, we were not permitted to ask any questions of Mr. Johnson, so I was not able to ask him (a) "What happens when whales have to come up to breathe?" and (b) "Exactly how do we communicate to the whales the idea that they can avoid the sound by diving?"

Everything I have read, and everything I heard at the public hearing, leads me to conclude that the Navy cannot say with any degree of certainty what the size of the take from use of LFAS would be, nor can the Navy determine a specified area in which the take would occur.

I ask the National Marine Fisheries Service not to succumb to pressure from the Navy. I ask you to live up to your legal and ethical responsibility under the MMPA to protect marine mammals by refusing to grant this permit.

Sincerely,

A handwritten signature in cursive script that reads "Mary Anne McCarthy". The signature is written in dark ink and is positioned above the printed name.

Mary Anne McCarthy, Ph.D.